

IN THE CLAIMS:

1. (Currently Amended) A radio base station for wirelessly connecting mobile stations in each time slot of a time division multiplex method by space-multiplexing a plurality of transmission signals having different directivity patterns of an adaptive array method,

the radio base station comprising:

a storage means for storing a table showing how time slots are assigned to mobile stations that are wirelessly connected;

a measuring means for measuring a reception level of a signal received from each mobile station shown in the table;

a judging means for judging whether a reception level is no less than a threshold value;

a changing means for changing an assignment of the mobile stations and the table so that mobile stations which each have a reception level no less than the threshold value; occupy a same time slot; and

a control means for reducing [[the]] a transmission power during a time slot, which is occupied by the mobile stations that each have a reception level no less than the threshold value, to a level that is lower than the transmission power of other time slots.

2. (Original) The radio base station of Claim 1,

wherein if it is judged that the reception level of any mobile station in the time slot, which is occupied by the mobile stations that each have a reception level no less than the threshold value, falls below the threshold value due to a movement of the mobile

station, the control means ~~[[put]]~~ puts the transmission power, during the time slot, back to an original level.

3. (Currently Amended) The radio base station of Claim 1 further comprising:

a signal processing unit for calculating a plurality of parameters used for space-multiplexing, the plurality of sets of parameters respectively corresponding to a plurality of antennas composing an adaptive array antenna,

wherein the measuring means includes:

an electric field strength detecting means for detecting an electric field strength
~~detecting means for detecting an electric field strength~~ of a signal received in each time slot; and

a reception level detecting means for detecting a reception level of a signal received from each mobile station, which is space multiplexed in each time slot according to the detected electric field strength and the calculated plurality of sets of parameters.

4. (Original) The radio base station of Claim 1,

wherein the control means changes a frequency during the time slot occupied by the mobile stations that each have a reception level no less than the threshold value to a frequency used for a low-power transmission.

5. (Currently Amended) The radio base station of one of claim 2 and further comprising:

a signal processing unit for calculating a plurality of parameters used for space-multiplexing, the plurality of sets of parameters respectively corresponding to a plurality of antennas composing an adaptive array antenna,

wherein the measuring means includes:

an electric field strength detecting means for detecting an electric field strength ~~detecting means for detecting an electric field strength~~ of a signal received in each time slot; and

a reception level detecting means for detecting a reception level of a signal received from each mobile station, which is space multiplexed in each time slot according to the detected electric field strength and the calculated plurality of sets of parameters.

6. (New) A radio base station comprising:

a measuring unit that receives a plurality of signals from a plurality of mobile stations and measures a signal level for each of the plurality of signals;

a storage unit that stores the signal level for each of the plurality of signals;

a judging unit that compares each signal level with a threshold value;

an assignment unit that assigns mobile stations having a signal level below the threshold value to a first time slot, and assigns mobile stations having a signal level above the threshold value to a second time slot; and

a control unit that reduces the transmission power of the second time slot.

7. (New) The radio base station of claim 6 wherein the control unit increases the transmission power of the second time slot, if the judging unit determines the signal level of a mobile station assigned to the second time slot is below the threshold value.
8. (New) The radio base station of claim 6 further comprising:
- an antenna array that receives the plurality of signals; and
 - a radio that demodulates the plurality of signals from the antenna array for processing by the measuring unit.
9. (New) The radio base station of claim 6 wherein the control unit changes frequency during the first or second time slot.
10. (New) A communication system wireless communication comprising:
- a plurality of mobile stations capable of time division multiple access (TDMA);
 - and
 - a radio base station capable of communicating with the plurality of mobile stations, the radio base station including:
 - a measuring unit that receives a plurality of signals from the plurality of mobile stations and measures a signal level for each of the plurality of signals;
 - an assignment unit that assigns each mobile station to a TDMA time slot based on its signal level; and
 - a control unit that adjusts transmission power for the TDMA time slot based on the signal level of the mobile station assigned to the time slot.

11. (New) The communication system of claim 10 wherein the radio base station further includes:

a plurality of radios that transmit on a plurality of frequencies,
wherein the assignment unit assigns each mobile station to one of the plurality of radios.

12. (New) The communication system of claim 10 wherein the radio base station further includes:

an antenna array that receives the plurality of signals; and
a radio that demodulates the plurality of signals from the antenna array for processing by the measuring unit.

13 (New) The communication system of claim 10 wherein the assignment unit assigns a plurality of mobile stations to a TDMA time slot.

14. (New) The communication system of claim 10 wherein the assignment unit establishes time slot assignment by placing the signal levels in order depending on threshold values.

15. (New) A wireless network comprising:

a plurality of mobile stations with time division multiple access (TDMA) capability; and
a base station comprising:

a radio capable of communicating with the plurality of mobile stations;

an antenna array electrically connected to the radio for transmitting and receiving radio waves;

an electric field detecting unit that detects an electric field strength at the radio;

a signal processing unit that uses the electric field strength to process signals from the radio and determine a signal level for each of the plurality of mobile stations;

an access control unit that assigns each of the plurality of mobile stations to a time slot based on its signal level; and

a transmission power control unit that adjusts transmission power based on the signal level of the mobile radio assigned to the time slot.

16. (New) The wireless network of claim 15 further comprising:

a plurality of radios that each transmit on a different frequency,

wherein the assignment unit assigns each of the plurality of mobile stations to one of the plurality of radios based on signal level.

17. (New) The wireless network of claim 15 wherein the access control unit assigns more than one mobile radio to a single time slot and wherein the transmission power control unit adjusts power based on the lowest signal level assigned to the single time slot.